REMARKS

Claims 32, 34-36, 38-40, 42-45 and 47-83 are pending in this application. Claims 32, 40, 50, 60, 70 and 76 have been amended to remove immaterial limitations. In the Office Action dated February 5, 2007, the Examiner took the following action: (1) rejected claims 32, 34-35, 38-40, 42-44 and 47-49 under 35 U.S.C. § 103(a) as being unpatentable over the publication entitled, *Intel MultiProcessor Specification* ("Intel") in view of the publication entitled, *Remote DOS Disk Server on a Unix Machine* ("Bose"); (2) rejected claims 50-56, 58-66 and 68-83 under 35 U.S.C. § 103(a) as being unpatentable over Intel in view of Bose or the publication entitled, *A Methodology for Fast PC hard Disk State Restoration* ("Langan"); (3) rejected claims 32, 34-35, 38-40, 42-44 and 47-49 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,884,091 to Ghori et al. ("Ghori") in view of Bose; (4) rejected claims 50-56, 58-66 and 68-83 under 35 U.S.C. § 103(a) as being unpatentable over Ghori in view of Bose or Langan; and (5) rejected claims 36, 45, 57 and 67 under 35 U.S.C. § 103(a) as being unpatentable over Intel in view of Bose and further in view of Official Notice.

The disclosed embodiments of the invention will now be discussed in comparison to the applied references. Of course, the discussion of the disclosed embodiments, and the discussion of the differences between the disclosed embodiments and the subject matter described in the applied references, do not define the scope or interpretation of any of the claims. Instead, such discussed differences merely help the Examiner appreciate important claim distinctions discussed thereafter.

An embodiment of the disclosed method selects a compatible processor for addition to a multiprocessor computer by using processor compatibility information. The multiprocessor computer has at least one current processor in a slot or socket and at least one additional slot or socket in which a new processor can be added. Each processor is a associated with a number that identifies that particular processor. The method executes a software program on a computer to determine the number of processors in the multiprocessor computer and the identification numbers of each of these. The method then obtains compatibility information from a remote location. The method executes a software program that compares the identification numbers of the processors with the processor compatibility information to determine which, if

any, other processors are compatible with the current processors. The method then provides information that identifies processors that are compatible with each current processor.

The Intel reference is a specification for an enhanced PC manufacturing standard for DOS-compatible systems. The specification is intended to provide a multiprocessor computing interface standard that allows for the extension of the PC/AT platform to a multiprocessor realm while still maintaining binary compatibility with legacy single processor platforms. The specification contemplates that a multiprocessor computer will be comprised of one bootstrap processor ("BSP") and one or more application processors ("AP"). At boot time, the bootstrap processor will have sole control of the system and its busses and only at a later time will any of the AP's be allowed to start. See pg. 4-3. At the heart of the specification are data structures that define the configuration of a multiprocessor system. These data structures are the "MP Configuration Table" and "Floating Point Structure." See Figure 4-1, pg. 4-1. The Floating Point Structure is a data structure containing a physical address pointer to the MP Configuration Table and is located in one of three possible locations in system memory. The Floating Point Structure must be present in system memory to indicate that the system conforms to the MultiProcessor Specification. See pg. 4-2. The information in these data structures is used by the operating system for, among other things, starting the AP's.

The MP Configuration Table is a configurable and optional data structure used to store information about the multiprocessor configuration including information about advanced programmable interrupt controllers, processors, buses and interrupts. It is important to note that the MP Configuration Table is a data structure. That is, the MP Configuration Table is, by definition, a structure in memory for storing information. The MP Configuration Table cannot be a computer implemented method, or software and it is not executable code of any kind. The MP Configuration Table is filled in by the BIOS after it executes a CPU ID procedure on each of the processors in the system. See pg. 4-8. After the MP Configuration Table is configured and the operating system is loaded, the information in the table may be used by the OS. Intel suggests that the information may be used to "configure the operating system." See pg. B-2. The MP Configuration table as disclosed by Intel is intended to allow the operating system to "configure itself." See pg. B-7.

Although the Intel reference generally suggests that the MP Configuration table may be used to allow the operating system to configure itself, Intel does not disclose that such information be used to determine which if any processors are compatible with existing processors within the system. Likewise, the Intel reference does not disclose any computer program for providing information about such compatible processors.

For the reasons discussed above, the Intel reference fails to disclose a method of selecting a compatible processor for addition to a multiprocessor computer. In fact, the Intel reference does not and cannot disclose such a method because it is only specifies the form and content of the Floating Point Structure and the MP Configuration Table data structures.

Ghori discloses an upgrade central processing unit ("CPU") that includes handshake circuitry enabling such an upgrade CPU to communicate information about itself with the original CPU in the computer system. Upon system power-up or upon a reset, the original system CPU determines if there is a CPU in the upgrade socket and if so, what kind of CPU is present. The information about the upgrade CPU's identification and cooperative relationship capability is stored in either a discrete memory device incorporated into the interprocessor circuitry or burned directly into the read-only memory of the processor. See col. 4, lines 53-61. This information is used by the original system CPU to configure the system. Although not claimed, Ghori also discloses that such information might be used by the operating system to further customize system operation. It is important to note that Ghori also does not disclose any means of identifying existing processors within the system. That is, Ghori only discloses storing identification of the upgrade CPU and not the original CPU. Ghori contemplates and discloses configuration of the operating system using ONLY the "upgrade family information" and NOT any information about the original CPU. See col. 5, lines 28-54. As with the Intel reference, Ghori does not disclose a method for determining which processors are compatible with each current processor nor does it disclose communicating that information so that a proper processor may be selected.

Bose discloses a Remote DOS Disk Server that allows users to remotely access information stored on a remote disk. The Examiner believes that Bose discloses certain aspects of the invention. In light of the present amendments, however, this reference does not disclose any subject matter of the claims.

Langan discloses a system for making a snapshot of a disk that may be used to restore a disk to some previous state. The Examiner believes that Langan discloses certain aspects of the invention. In light of the present amendments, however, this reference does not disclose any subject matter of the claims.

Turning now to the claims, Intel fails to disclose each and every limitation of amended claims 32, 40, 50, 60, 70 and 76. Amended claim 32 is directed towards a method of selecting a compatible processor for addition to a multiprocessor computer. In particular, the method requires identifying each processor currently installed in the computer and "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." The method also requires "providing information identifying the processors that are compatible with each current processor." For the reasons discussed above, Intel fails to teach or suggest "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Likewise, Intel does not teach or suggest "providing information identifying the processors that are compatible with each current processor." Although Intel does teach a means of identifying each current processor and storing identifying information in the MP Configuration table, it does not teach or suggest any use for such information aside from the general operation of configuring an operating system. Because Intel does not teach or suggest the limitations encompassed by these claim elements, amended claim 32 is patentable over Intel.

Amended claim 40 is directed a method of selecting a compatible processor for addition to a multiprocessor computer. In particular, the method requires "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." The method also requires "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Lastly, the method also specifies "providing an indication whether or not the new processor is compatible before adding the new processor to the multiprocessor computer." As was discussed above, Intel only teaches or suggests a mechanism for identifying the processors that are currently installed on a computer and providing that and other configuration information to the operating system. Intel does not, therefore, teach or

suggest "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." Intel also does not teach or suggest "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Of course, since Intel does not teach determining whether a proposed new processor is compatible with existing processors, it likewise does not teach or suggest "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." Amended claim 40 is, therefore, patentable over Intel.

Amended claim 50 is directed towards a system for selecting a new processor for addition to a multiprocessor computer. In particular, the system includes "a third component [used] to determine the processors that are compatible with the at least one current processor" of the multiprocessor computer. The system also includes "a fourth component coupled to the third component that provides information identifying the processors that are compatible with each current processor before adding the new processor to the multiprocessor computer." For the reasons discussed above, Intel fails to teach or suggest "a third component [used] to determine the processors that are compatible with the at least one current processor." Likewise, Intel does not teach or suggest "a fourth component coupled to the third component that provides information identifying the processors that are compatible with each current processor before adding the new processor to the multiprocessor computer." Intel fails to teach or suggest these limitations because Intel only teaches or suggests a means of a means of identifying each current processor and storing identifying information in the MP Configuration table. It does not, however, teach or suggest any use for such information aside from the general operation of configuring an operating system. Amended claim 50 is, therefore, patentable over Intel.

Amended claim 60 is directed towards a system for selecting a new processor for addition to a multiprocessor computer. In particular, the system includes "a second component allowing identifying information to be provided that identifies [a] new processor before adding the new processor to the multiprocessor computer." The system also includes "a fourth component [used] to compare the identifying information for the new processor . . . to determine processors that are compatible with each current processor." Lastly, the system includes "a fifth component that provides an indication whether or not the new processor is compatible before

adding the new processor to the multiprocessor computer." As was discussed above, Intel only teaches or suggests a mechanism for identifying the processors that are currently installed on a computer and providing that and other configuration information to the operating system. Intel does not, therefore, teach or suggest "a second component allowing identifying information to be provided that identifies [a] new processor before adding the new processor to the multiprocessor computer." Intel also does not teach or suggest "a fourth component [used] to compare the identifying information for the new processor . . . to determine processors that are compatible with each current processor." Of course, since Intel does not teach determining whether a proposed new processor is compatible with existing processors, it likewise does not teach or suggest "a fifth component that provides an indication whether or not the new processor is compatible before adding the new processor to the multiprocessor computer." Amended claim 60 is, therefore, patentable over Intel.

Amended claim 70 is directed towards a computer-readable medium containing instructions for causing a computer system to select a new processor for addition to a multiprocessor computer. In particular, claim 70 requires identifying each processor currently installed in the computer and "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Amended claim 70 also requires "providing information identifying the processors that are compatible with each current processor." For the reasons discussed above, Intel fails to teach or suggest "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Likewise, Intel does not teach or suggest "providing information identifying the processors that are compatible with each current processor." Although Intel does teach a means of identifying each current processor and storing identifying information in the MP Configuration table, it does not teach or suggest any use for such information aside from the general operation of configuring an operating system. Because Intel does not teach or suggest the limitations encompassed by these claim elements, claim 70 is patentable over Intel.

Amended claim 76 is directed towards a computer-readable medium containing instructions for causing a computer system to select a new processor for addition to a multiprocessor computer. In particular, claim 76 requires "providing identifying information

indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." Amended claim 76 also requires "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Lastly, claim 76 also specifies "providing an indication whether or not the new processor is compatible before adding the new processor to the multiprocessor computer." As was discussed above, Intel only teaches or suggests a mechanism for identifying the processors that are currently installed on a computer and providing that and other configuration information to the operating system. Intel does not, therefore, teach or suggest "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." Intel also does not teach or suggest "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Of course, since Intel does not teach determining whether a proposed new processor is compatible with existing processors, it likewise does not teach or suggest "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." Amended claim 76 is, therefore, patentable over Intel.

Lastly, neither Bose nor Langan teach or fairly suggest any of the limitations that are absent from the teachings of the Intel reference. Amended claims 32, 40, 50, 60, 70 and 76 are, therefore, patentable over any combination of Intel, Bose and Langan.

Turning now the Ghori reference, amended claim 32 is directed towards a method of selecting a compatible processor for addition to a multiprocessor computer. In particular, the method requires "executing a computer program . . . that allows the identity of each current processor to be determined" and "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." The method also requires "providing information identifying the processors that are compatible with each current processor." For the reasons discussed above, Ghori fails to teach or suggest requires "executing a computer program . . . that allows the identity of each current processor to be determined." Ghori also does not disclose "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Likewise, Ghori does

not teach or suggest "providing information identifying the processors that are compatible with each current processor." Although Ghori does teach a means of identifying an upgrade processor and its features, it does not teach or suggest any use for such information aside from the general operation of configuring an operating system. Because Ghori does not teach or suggest the limitations encompassed by these claim elements, amended claim 32 is patentable over Ghori.

        Amended claim 40 is directed a method of selecting a compatible processor for addition to a multiprocessor computer. In particular, the method requires "executing a computer program . . . that allows the identity of each current processor to be determined." Amended claim 40 also specifies "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." The method also requires "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Lastly, the method also specifies "providing an indication whether or not the new processor is compatible before adding the new processor to the multiprocessor computer." As was discussed above, Ghori only teaches or suggests a mechanism for identifying an upgrade processor family and providing that and other configuration information to the operating system. Ghori does not, therefore, teach or suggest "executing a computer program . . . that allows the identity of each current processor to be determined." Likewise, Ghori does not teach or suggest the limitation of "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." Ghori also does not teach or suggest "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Of course, since Ghori does not teach determining whether a proposed new processor is compatible with existing processors, it likewise does not teach or suggest "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." Amended claim 40 is, therefore, patentable over Ghori.

        Amended claim 50 is directed towards a system for selecting a new processor for addition to a multiprocessor computer. In particular, the system includes "a first component on the multiprocessor computer that determines the identity of each current processor in the multiprocessor computer." The system also includes "a third component [used] to determine the

processors that are compatible with the at least one current processor" of the multiprocessor computer. The system also includes "a fourth component coupled to the third component that provides information identifying the processors that are compatible with each current processor before adding the new processor to the multiprocessor computer." For the reasons discussed above, Ghori fails to teach or suggest "a first component on the multiprocessor computer that determines the identity of each current processor in the multiprocessor computer" because Ghori only discloses identifying the upgrade CPU and not the original CPU. Ghori also fails to teach or suggest "a third component [used] to determine the processors that are compatible with the at least one current processor." Likewise, Ghori does not teach or suggest "a fourth component coupled to the third component that provides information identifying the processors that are compatible with each current processor before adding the new processor to the multiprocessor computer." Amended claim 50 is, therefore, patentable over Ghori.

Amended claim 60 is directed towards a system for selecting a new processor for addition to a multiprocessor computer. In particular, the system includes "a first component on the multiprocessor computer that determines the identity of each current processor in the multiprocessor computer" The system also includes "a second component allowing identifying information to be provided that identifies [a] new processor before adding the new processor to the multiprocessor computer." The system also includes "a fourth component [used] to compare the identifying information for the new processor . . . to determine processors that are compatible with each current processor." Lastly, the system includes "a fifth component that provides an indication whether or not the new processor is compatible before adding the new processor to the multiprocessor computer." As was discussed above, Ghori only teaches or suggests a mechanism for identifying the upgrade processor family and providing that and other configuration information to the operating system. Ghori does not, therefore, teach or suggest "a first component on the multiprocessor computer that determines the identity of each current processor in the multiprocessor computer." Ghori likewise does not teach or suggest "a second component allowing identifying information to be provided that identifies [a] new processor before adding the new processor to the multiprocessor computer." Ghori also does not teach or suggest "a fourth component [used] to compare the identifying information for the new processor . . . to determine processors that are compatible with each current processor." Of course, since

Ghori does not teach determining whether a proposed new processor is compatible with existing processors, it likewise does not teach or suggest "a fifth component that provides an indication whether or not the new processor is compatible before adding the new processor to the multiprocessor computer." Amended claim 60 is, therefore, patentable over Ghori.

Amended claim 70 is directed towards a computer-readable medium containing instructions for causing a computer system to select a new processor for addition to a multiprocessor computer. In particular, claim 70 requires "executing a computer program . . . that allows the identity of each current processor to be determined" and "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Amended claim 70 also requires "providing information identifying the processors that are compatible with each current processor." For the reasons discussed above, Ghori fails to teach or suggest "executing a computer program . . . that allows the identity of each current processor to be determined" and also fails to teach or suggest "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Likewise, Ghori does not teach or suggest "providing information identifying the processors that are compatible with each current processor." Although Ghori does teach a means of identifying the upgrade family of an upgrade CPU, Ghori does not teach use of such information aside from the general operation of configuring an operating system. Because Ghori does not teach or suggest the limitations encompassed by these claim elements, claim 70 is patentable over Ghori.

Amended claim 76 is directed towards a computer-readable medium containing instructions for causing a computer system to select a new processor for addition to a multiprocessor computer. In particular, claim 76 requires "executing a computer program . . . that allows the identity of each current processor to be determined." Amended claim 76 also requires "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." Amended claim 76 also requires "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Lastly, claim 76 also specifies "providing an indication whether or not the new processor is compatible before
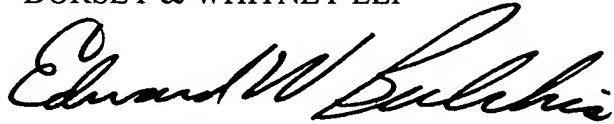
adding the new processor to the multiprocessor computer." As was discussed above, Ghori only teaches or suggests a mechanism for identifying the upgrade family of an upgrade processor installed on a computer and providing that and other configuration information to the operating system. Ghori does not, therefore, teach or suggest "executing a computer program . . . that allows the identity of each current processor to be determined." Ghori likewise does not teach or suggest "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." Ghori also does not teach or suggest "executing a computer program comparing the identifying information for each current processor . . . to determine the processors that are compatible with each current processor." Of course, since Ghori does not teach determining whether a proposed new processor is compatible with existing processors, it likewise does not teach or suggest "providing identifying information indicative of the identity of [a] new processor before adding the new processor to the multiprocessor computer." Amended claim 76 is, therefore, patentable over Ghori.

Lastly, neither Bose nor Langan teach or fairly suggest any of the limitations that are absent from the teachings of the Ghori reference. Amended claims 32, 40, 50, 60, 70 and 76 are, therefore, patentable over any combination of Ghori, Bose and Langan. Likewise, even if the Official Notice taken by the Examiner is correct, such Official Notice does not teach or fairly suggest any of the limitations absent from the teachings of Intel or Ghori. The remaining claims in the application rejected over the Intel, Ghori, Bose, Langan and Official Notice are patently distinguished over these references because of their dependency on patentable independent claims and because of additional limitations added by those claims.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a timely Notice of Allowance are earnestly solicited.

Respectfully submitted,

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